THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY
OF THE
VILLAGE OF PORT McNICOLL

1964

REPORT

on

VILLAGE OF PORT McNICOLL

WATER POLLUTION SURVEY

Division of Sanitary Engineering

Ontario Water Resources Commission

October 1964

INTRODUCTION

A water pollution survey was conducted in the Village of Port McNicoll on October 7, 1964. This investigation was intended to re-assess those factors contributing to the impairment of surface waters in the area.

Persons interviewed at the time of this investigation were as follows:

Mr.B.J.Brownell, Clerk-Treasurer, Village of Port McNicoll;
Mr.D.Morrow, Public Health Inspector, Simcoe County Health Unit;
Mr.J.Young, Bridge & Building Foreman, Canadian Pacific Railway;
Mr.M.J.Kelley, Foreman, Village of Port McNicoll.

PREVIOUS REPORT

A previous sanitary investigation was carried out in Port McNicoll during June 16 and 17, 1959.

The following recommendations resulted from that investigation:

1. Action be taken by the Village of Port McNicoll to prevent the discharge of inadequately treated wastes to Georgian Bay.
2. The Canadian Pacific Railway take action to prevent the discharge of inadequately treated wastes to Georgian Bay at Port McNicoll.

The results of the recent investigation indicated that little action has been taken to implement the first recommendation. The Canadian Pacific Railway has eliminated waste discharges to Georgian Bay from several areas of the property.

GENERAL

The Village of Port McNicoll is located six miles east of Midland on Georgian Bay. The residential population of 1,148 increases to a figure of approximately 2000 during the summer tourist season.

The area bordering Georgian Bay east of the village is for the most part Canadian Pacific Railway property.

This municipality is situated in the Georgian Bay drainage basin.

WATER USES

Surface water in this area is used for domestic, industrial, recreational and navigational purposes.

Water from Georgian Bay is chlorinated and pumped to the municipal distribution system.

WATER POLLUTION

Sanitary waste disposal in the municipality is achieved by means of individual septic tank systems and privies. A storm water drainage system consisting of storm sewers and open ditches serves the built-up area of the village. Sanitary wastes are gaining access to this system which drains to Georgian Bay.

Sanitary wastes from several drains serving the Canadian Pacific Railway property have access to Georgian Bay.

Industry within the village is minimal and does not appear to be a contributor to water pollution.

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SAMPLING PROCEDURE

Samples were collected for bacteriological examination and chemical analysis. The results of these samples and a plan indicating the location of outfalls are appended to this report. The following is a list of sample locations and conditions noted at the time of this investigation:

Sample No.	Location and Remarks
P-1	Area drainage ditch - south of CPR Station- estimated flow 1 gpm- drains low marshy area west of the Canadian Pacific Railway property.
P-2	Storm sewer outfall- corner of First St. and First Ave. - estimated flow 0.5 gpm. Investigation of the First Ave. storm sewer revealed an increased flow from Seventh Ave.East.
P-2A	Storm sewer outfall - corner of Second St. and First Ave. - estimated flow 0.5 gpm - flow directed to First St.
P-3	4 ft. x 4 ft. storm sewer serving Third St. - sampled at outfall east of First Ave. - estimated flow 8 gpm - estimated flow at Seventh Ave. 1 gpm - this sewer drains a watercourse originating in Twp.of Tay
P-4	Stream from pond area to Georgian Bay at Third St. extension - estimated flow 4 gpm - this pond collects most of the drainage from the built-up area of Port McNicoll.
P-5	Drain from laundry building - no longer in use.
P-6	Drain from CPR owned house directed to wood-walled cesspool on Georgian Bay shoreline - insufficient flow for sampling.
P-7	CPR sanitary sewer outfall - no flow - reportedly disconnected.
P-8	CPR sanitary sewer outfall - no flow reportedly disconnected.

a BOD of 110 ppm and a suspended solids concentration of 61. Excessive bacteriological concentrations were noted in the discharges at several sampling points.

SUMMARY & CONCLUSIONS

As a result of a recent water pollution survey at the Village of Port McNicoll on October 7, 1964, it is evident that little has been accomplished since the 1959 survey in correcting the discharge of domestic wastes to the municipal storm sewer system which drains to Georgian Bay. Wastes are gaining access to this system from malfunctioning disposal systems and by means of direct connections to the sewers. The chief offenders appear to be in the area bound by First Street, First Avenue, Fourth Street, and Seventh Avenue. This area comprises the built-up portion of the village. The correction of individual malfunctioning disposal systems should be supervised by the local public health authorities. However, severing of direct connections discharging domestic wastes to this system is the responsibility of the municipality. It appears that connections to the storm sewers would be difficult to locate in the built-up area. If the discharge of these contaminating wastes to Georgian Bay cannot be effectively corrected on an individual basis, a municipal sewage system designed to treat these wastes should be considered. It would no doubt be necessary, due to the financial burden, to stage such a project to first serve those areas of the village where individual sewage disposal is impracticable.

Sample No.	Location and Remarks
P-9	CPR sanitary sewer outfall - not located
P-10	CPR sanitary sewer outfall from flour-shed to boat slip - serves office and second floor toilet facilities - evidence of recent sanitary waste discharge.
P-11	CPR sanitary sewer outfall - not located.
P-12	CPR sanitary sewer outfall - not located.
P-13	CPR sanitary sewer outfall - insufficient flow for sampling.

Bacteriological samples were collected by the Simcoe County Health Unit staff from Georgian Bay at Port McNicoll on August 5, 1964, and from the boat slip on August 7, 1964. A total of 36 samples were collected on these dates. The results of 12 samples collected from these areas indicated *Escherichia coli* concentrations ranging from 3 to 110,000 measured as "most probable number" of bacteria per 100 cubic centimeters. The presence of E. coli organisms indicates pollution of intestinal origin.

DISCUSSION

Storm sewer effluent discharged to natural watercourses in Ontario should have a biochemical oxygen demand (BOD) not greater than 15 parts per million and a suspended solids concentration of not greater than 15 ppm.

The results of samples collected from the Port McNicoll drainage system indicated that contaminating wastes had access to Georgian Bay. This is particularly apparent at the First Street storm sewers where sample results indicated

A preliminary engineering report prepared by a consulting engineer would first be necessary. Corrective action at the Canadian Pacific Railway property has reduced the discharge of sanitary wastes to Georgian Bay from this area. However, a few isolated outfalls such as indicated in sample locations 6, 10, and 13, are still believed to exist. The discharge of wastes from these outfalls should be discontinued.

RECOMMENDATIONS

1. All malfunctioning waste disposal systems should be corrected to the satisfaction of the Simcoe County Health Unit staff. All new septic tank systems should be installed under the direction of the same.

2. The practice of discharging inadequately treated wastes to Georgian Bay should be discontinued and the municipality should take steps to sever all connections discharging domestic wastes to the storm drainage system.

3. If the above two recommendations cannot be effectively implemented it is suggested that a municipal sewage system be considered and a preliminary engineering report be prepared by a consulting engineer.

All of which is respectfully submitted,

District Engineer: ____________________
H. Browne

Approved by: ____________________
K.H. Sharpe, Director

Prepared by: W.C. Stevens

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MUNICIPALITY: Port McNicoll
SOURCE: Georgian Bay - outfalls
DATE SAMPLED: Oct.7/64 BY: W.C.Stevens

All analyses except
reported in ppm unl
otherwise indicated

Lab. No.	5-day BOD	Solids Total	Solids Susp.	Solids Diss.	Phenols in ppb	BACTERIOLOGICAL EXAMINATION Lab. No.	BACTERIOLOGICAL EXAMINATION MF Coliforms per 100 ml
9747	0.4	150	24	126	10	S-17918	1,570
9748	110	462	61	401	20	S-17919	183,000,000
9749	12	544	16	528	16	S-17920	4,400,000
9750	1.2	174	3	171	10	S-17921	111,000
9751	1.5	146	22	124	6	S-17922	35,000
9752	1.3	114	10	104	3	S-17923	0

9747	P-1	Area drain - south CPR station
9748	P-2	Storm sewer - corner of First St and First Ave.
9749	P-2A	Storm sewer - corner of Second St. and First Ave.
9750	P-3	Storm sewer - corner of Third St and First Ave.
9751	P-4	Area drain from pond to Georgian Bay at CPR Road
9752	P-10	Discharge from CPR flour-shed

WATER ANALYSIS

MUNICIPALITY: Port McNicoll

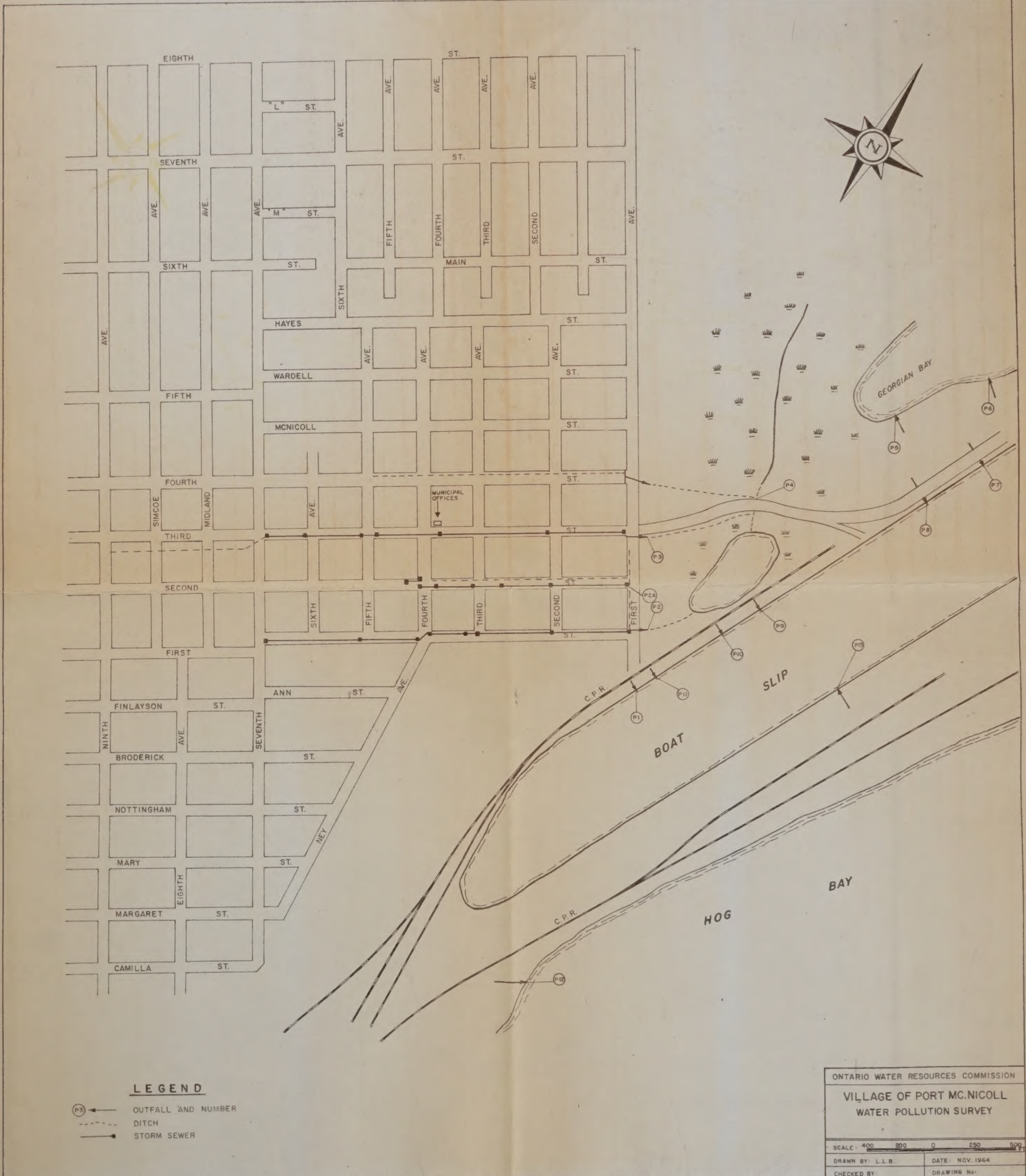
SOURCE: Municipal Supply

DATE SAMPLED: Oct.7/64 BY:W.C.Stevens

All analyses except pH reported in ppm unless otherwise indicated.

						BACTERIOLOGICAL EXAMINA	
Lab. No.	Hardness as $CaCO_3$	Alkalinity as $CaCO_3$	Iron as Fe	Chloride as Cl	pH at lab.	Lab. No.	MF Coliforms per 100 ml
W-6357	88	72	0.20	8	8.0	W-17926	0
R-4537	104	68	0.13	4	8.2	R-17924	40
R-4538	98	72	0.34	4	8.0	R-17925	170

W-6357	1	Port McNicoll treated water supply
R-4537	G-1	Georgian Bay - adjacent to Port McNicoll water works - raw
R-4538	G-2	Georgian Bay - adjacent to CPR flour-shed from the boat slip



ONTARIO WATER RESOURCES COMMISSION

VILLAGE OF PORT MC.NICOLL
WATER POLLUTION SURVEY

SCALE: 400 200 0 250 500
DRAWN BY: L.L.B.
DATE: NOV. 1964
CHECKED BY:
DRAWING No: